Changes in the Latest Mobile IPv6 Draft

`draft-ietf-mobileip-ipv6-06.txt`

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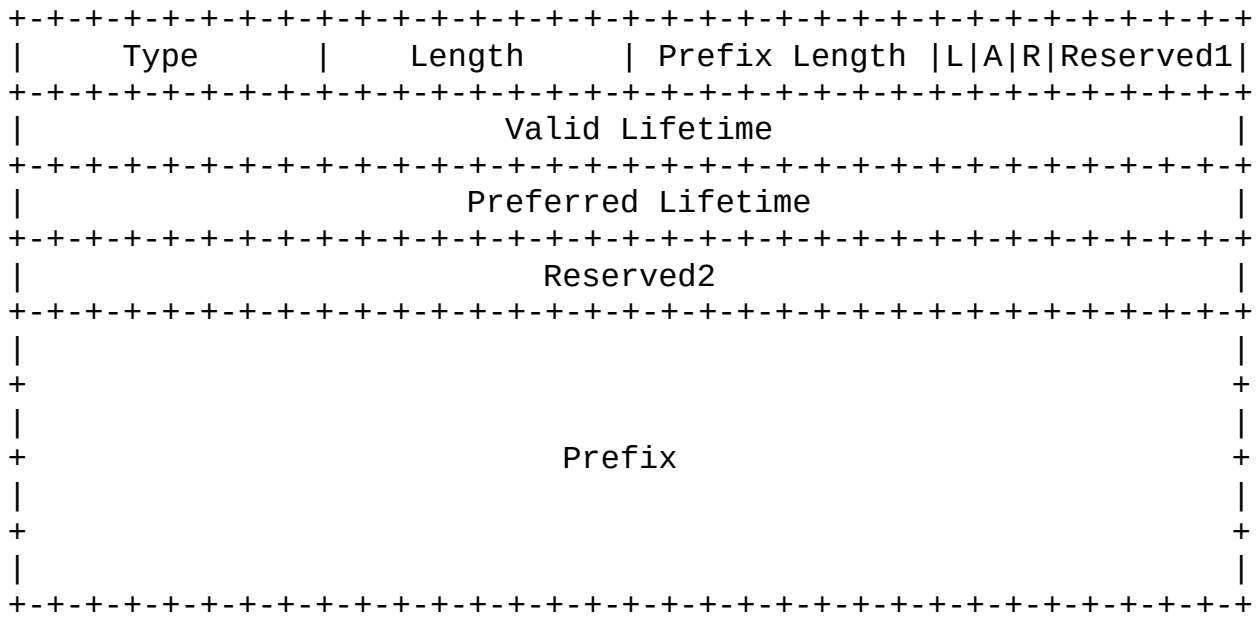
Minor Changes and Corrections

- Advertisement Interval option MAY be included by any router, not just by home agents
- Any router MAY use relaxed limits on MaxRtrAdvInterval and MinRtrAdvInterval to allow faster Advertisements
- Documented new limits on MAX_RTR_SOLICITATIONS and RTR_SOLICITATION_INTERVAL for mobile nodes sending Router Solicitations while away from home
- If a mobile node has multiple home addresses using different interface identifiers, it SHOULD send a separate Binding Update to its home agent for each
- Finally filled in Section 2, giving a comparison of Mobile IPv6 with Mobile IP for IPv4

Modified Prefix Information Option Format

On Router Advertisement:

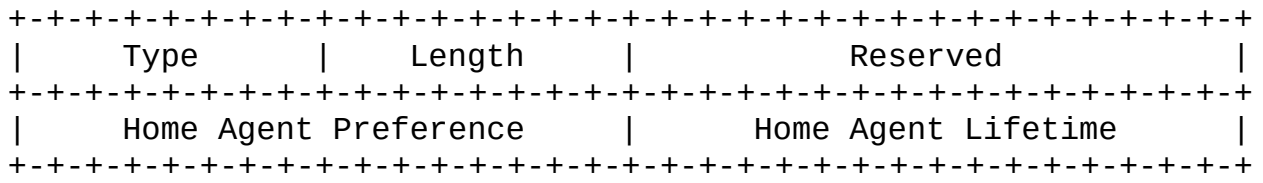


New flag bit ***Router Address (R)***:

- Set to indicate whole Prefix field is router's address
- Compatible with existing uses of Prefix field
- Router MUST include in solicited Router Advertisement
- Router SHOULD include in unsolicited Router Advertisements

New Home Agent Information Option Format

On Router Advertisement:



Allows home agent to advertise values about itself:

- ***Preference***: Signed value (default 0) used for sorting reply list for dynamic home agent address discovery
- ***Lifetime***: Can give lifetime separately from router lifetime

Use in dynamic home agent address discovery:

- Home agents remember values in Home Agents List
- In discovery reply, home agent includes self in list only if not highest preference

Receiving Packets While Away From Home

IPv6 suggests that nodes MAY reverse received Routing header for response packets (if authenticated)

But for mobile node away from home this is bad:

- Routing header directs packet to care-of address then to home address
- Reversing Routing header would send response out looped back through care-of address too
- Inefficient, and confusing to receiving node

For response packets by mobile node away from home:

- SHOULD NOT include care-of address as first hop in route
- If no other hops, SHOULD NOT include Routing header

Address Scope Issues

Packets addressed to a mobile node's site-local address:

- Consensus is SHOULD be forwarded while away from home
- But this behavior MUST be configurable to disable it
- This default might change as "sites" and site-local addresses become better defined

Multicast packets with link-local $<$ scope $<$ global:

- Same as site-local unicast above
- This default may change as multicast scopes become better defined

Binding Lifetime Rules

New rules specified to limit lifetimes:

- On primary care-of address registration:
  - Home agent MUST reduce lifetime to no greater than remaining prefix lifetime
- When sending a Binding Update:
  - Mobile node MUST NOT send lifetime greater than remaining binding lifetime for home registration

Ensures no use of binding beyond home address lifetime

Renumbering the Home Network

Home agent watches for “important” Router Advertisements:

- The preferred or valid lifetime for an existing prefix on the home link is reduced
- A new prefix is introduced on the home link
- State of home agent’s AdvManagedFlag flag changes

When any of these occur:

- Home agent tunnels constructed Router Advertisement with changed info and Binding Request to mobile node
- Retransmits until Binding Request is answered
- Ensures important Router Advertisement changes seen by mobile node